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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/887,980	06/22/2001	Ming-Dou Ker	3158/OJ557	8085

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EXAMINER

RODRIGUEZ, ISABEL

ART UNIT PAPER NUMBER

2836

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

RR

Office Action Summary

Application No.

09/887,980

Applicant(s)

KER ET AL.

Examiner

Isabel Rodriguez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 14 is/are rejected.
- 7) ☒ Claim(s) 9-13 and 15-27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5-6, 8, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Ravanelli et al. (US 5,959,332).

a) Regarding claims 1 and 14, Ravanelli et al. discloses an ESD protection circuit, coupled between a first connection pad and a second connection pad, located on a substrate of a first conductivity type (10) comprising a lateral silicon controlled rectifier, comprising a p-type layer, as an anode of the SCR, an N-type layer, as a cathode of the SCR, a first N-well, located between the the p-type layer and the N-type layer, contacted with the p-type layer, and a first P-well contacted to the first N-well and the N type layer, and a deep well of a second conductivity type (11) located between the lateral SCR and the substrate, wherein the anode and the cathode are coupled to the first connection pad and the second connection pad respectively..

b) Regarding claim 2, Ravanelli et al. discloses an ESD protection circuit wherein the N-type layer is formed by a first N-type diffusion in a first P well (13).

c) Regarding claim 3, Ravanelli et al. discloses the ESD protection circuit wherein the first P-well is coupled to the cathode (22).

d) Regarding claim 5, Ravanelli et al. discloses the ESD protection circuit wherein the lateral SCR is a P-type SCR.

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e) Regarding claims 6, Ravanelli et al. discloses the ESD protection circuit wherein the P-type layer is located in the first N-well (15).

f) Regarding claim 8, Ravanelli et al. discloses the ESD protection circuit wherein the substrate is a P-substrate and the deep well is a deep N-well.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ravanelli et al.

Ravanelli et al. discloses an ESD protection circuit, coupled between a first connection pad and a second connection pad, located on a substrate of a first conductivity type (10) comprising a lateral silicon controlled rectifier, comprising a p-type layer, as an anode of the SCR, an N-type layer, as a cathode of the SCR, a first N-well, located between the p-type layer and the N-type layer, contacted with the p-type layer, and a first P-well contacted to the first N-well and the N-type layer, and a deep well of a second conductivity type (11) located between the lateral SCR and the substrate, wherein the anode and the cathode are coupled to the first connection pad and the second connection pad respectively wherein the lateral SCR is a P-type SCR and wherein the P-type layer is located in the first N-well (15). Ravanelli et al does not disclose that the lateral SCR is a P-type SCR and the P-type layer is located in the first N-

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well. In absence of persuasive evidence that a particular type of layer configuration is significant, it would have been an obvious matter of choice to one of ordinary skill in the art to utilize any type of layer configuration in order to get a P-type SCR and a P-type layer is located in the first N-well as long as it provide the intended function of ESD protection. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Allowable Subject Matter

5. Claims 9-13 and 15-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

Claims 9-13 and 15-27 disclose, inter alia, an ESD protection circuit, coupled between a first connection pad and a second connection pad, located on a substrate of a first conductivity type comprising a lateral silicon controlled rectifier, comprising a p-type layer, as an anode of the SCR, an N-type layer, as a cathode of the SCR, a first N-well, located between the the p-type layer and the N-type layer, contacted with the p-type layer, and a first P-well contacted to the first N-well and the N type layer, and a deep well of a second conductivity type located between the lateral SCR and the substrate, wherein the anode and the cathode are coupled to the first connection pad and the second connection pad respectively wherein the deep well is connected to a fix biased N well and coupled to a relatively high voltage source.

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Ravanelli et discloses an ESD protection circuit with a lateral SCR but does not disclose that the deep well is connected to a fix biased N well and coupled to a relatively high voltage source.

The references of record do not teach or suggest the aforementioned limitation, nor would it be obvious to modify those references to include such limitation.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isabel Rodriguez whose telephone number is 703-305-4761.

The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 703-308-3119. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7724 for regular communications and 703-308-7704 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

IR
September 30, 2003


BRIAN SIRCUS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800